Aviation Investigation Final Report

Location:	HELPER, Utah	**Accident Number:**	DEN00LA069
Date & Time:	April 1, 2000, 14:30 Local	**Registration:**	N50330
Aircraft:	Hawkins & Powers UH-1B	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 Minor
Flight Conducted Under:	Part 133: Rotorcraft ext. load		

Analysis

As the helicopter approached logging personnel with a 150 foot long line, the pilot heard a 'Shhhh' sound and was advised smoke was coming from the engine. He turned and proceeded down the mountain. The engine then 'quit.' The helicopter collided with heavily wooded steep terrain. The number 1 and 2 bearings were submitted for metallurgical examination. The metallurgical report stated that 'the most likely cause of [the] engine malfunction was degradation of the Position #1 bearing due to insufficient lubrication.' All other damage appeared to be 'secondary.' The accessory carrier assembly was oil flow tested and found to be 'acceptable,' albeit 'near the lower end of requirements.' Debris in the bearing oil strainer was believed to be 'coked oil and epoxy hardener, both unusual for this area of the engine.'

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Total failure of the number 1 bearing due to lack of lubrication, the oil flow being restricted by a foreign object (epoxy hardener). Factors were trees and the unavailability of suitable terrain for a forced landing.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - MECH FAILURE/MALF
Phase of Operation: MANEUVERING

Findings

1. (C) ENGINE ASSEMBLY,BEARING - FAILURE,TOTAL
2. (C) LUBRICATING SYSTEM - FLOW RESTRICTED
3. (C) LUBRICATING SYSTEM,OIL FILTER/SCREEN - FOREIGN OBJECT

Occurrence #2: FORCED LANDING
Phase of Operation: DESCENT - EMERGENCY

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - EMERGENCY

Findings
4. (F) OBJECT - TREE(S)
5. (F) TERRAIN CONDITION - NONE SUITABLE

Factual Information

On April 1, 2000, approximately 1430 mountain standard time, a Bell UH-1B, N50330, registered to and operated by Precision Air, LLC, of Provo, Utah, was destroyed when it collided with terrain while maneuvering 15 miles northwest of Price, Utah. The airline transport certificated pilot sustained minor injuries. Visual meteorological conditions prevailed, and no flight plan had been filed. The helicopter was being operated under Title 14 CFR Part 133. The flight originated at a nearby staging area at an undetermined time.

According to the pilot's accident report, he was logging with a 150 foot long line. As he approached ground personnel, he heard a "Shhhh" sound and was advised there was smoke coming from the engine. Seeing smoke on the left side of the helicopter, he turned and proceeded down the mountain. The engine then "quit." The terrain was wooded and steep, and he attempted to fly towards a clearing. He "pulled pitch" to clear trees. The rotor blades struck the trees and the helicopter fell into a snow bank.

The wreckage was moved to a sawmill in Price, Utah, where, on April 19, the Lycoming T53-L-13 turboshaft engine was given a preliminary examination by FAA inspectors and representatives from Honeywell. A more detailed examination followed at Precision Air's hangar in Provo, Utah. The number 1 and 2 bearings and the number 1 sealing nut were submitted to Honeywell's metallurgical laboratory in Phoenix, Arizona, for examination. According to its report, "the most likely cause of [the] engine malfunction was degradation of the Position #1 bearing due to insufficient lubrication." All other damage appeared to be "secondary." The accessory carrier assembly was oil flow tested and found to be "acceptable," albeit "near the lower end of requirements." Debris in the bearing oil strainer was believed to be "coked oil and epoxy hardener, both unusual for this area of the engine."

In a telephone interview, the pilot stated he had previously experienced a number 1 bearing failure in another, but similar, helicopter.

The operator was asked to submit the engine maintenance records but has gone out of business, and all attempts to contact him have been to no avail.

Pilot Information

Certificate:	Airline transport	**Age:**	54,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	
Instrument Rating(s):	Airplane; Helicopter	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	October 27, 1999
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	12104 hours (Total, all aircraft), 6500 hours (Total, this make and model), 11180 hours (Pilot In Command, all aircraft), 158 hours (Last 90 days, all aircraft), 69 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Hawkins & Powers	**Registration:**	N50330
Model/Series:	UH-1B UH-1B	**Aircraft Category:**	Helicopter
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Restricted (Special)	**Serial Number:**	62-2078
Landing Gear Type:	Skid	**Seats:**	7
Date/Type of Last Inspection:	Unknown	**Certified Max Gross Wt.:**	8500 lbs
Time Since Last Inspection:		**Engines:**	1 Turbo shaft
Airframe Total Time:		**Engine Manufacturer:**	Lycoming
ELT:		**Engine Model/Series:**	T53-L-13
Registered Owner:	PRECISION AIR, LLC	**Rated Power:**	1250 Horsepower
Operator:		**Operating Certificate(s) Held:**	
Operator Does Business As:		**Operator Designator Code:**	P99L

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	PVU ,4494 ft msl	**Distance from Accident Site:**	65 Nautical Miles
Observation Time:	13:55 Local	**Direction from Accident Site:**	290°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	260°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	11°C / -7°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	HELPER , UT (NONE)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	00:00 Local	**Type of Airspace:**	Class G

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Minor	**Latitude, Longitude:**	39.669685,-111.009384(est)

Administrative Information

Investigator In Charge (IIC):	Scott, Arnold
Additional Participating Persons:	LEW C OLSON; SALT LAKE CITY , UT
Original Publish Date:	March 2, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=48883